永兴新能源

1 à β 1
2 à 2
2.1 2
2.1.1 2
2.1.2 2
2.1.3 3
2.2 à 5
2.2.1 5
2.2.1 5
2.3 à 6
2.3.1 6
2.3.2 6
2.3.3 7
3 à 8
4 à ʊ . . . . . .
4 à ʊ . . . . . Ŏ Ŏ 2
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7.1.5 15
7.1.6 16
7.2 16
7.2.1 16
7.2.2 γ 17
7.2.3 17
7.2.4 Й 18
7.2.5 18
7.2.6 19
7.3 19
7.3.1 19
7.3.2 γ 19
7.3.3 20
7.3.4 Й 20
7.3.5 20
7.3.6 21
8 à 22
8.1 22
8.2 22
9 à ъ 22
9.1 à 2023 ’ .....
9.2 à 2023 Й Â .....

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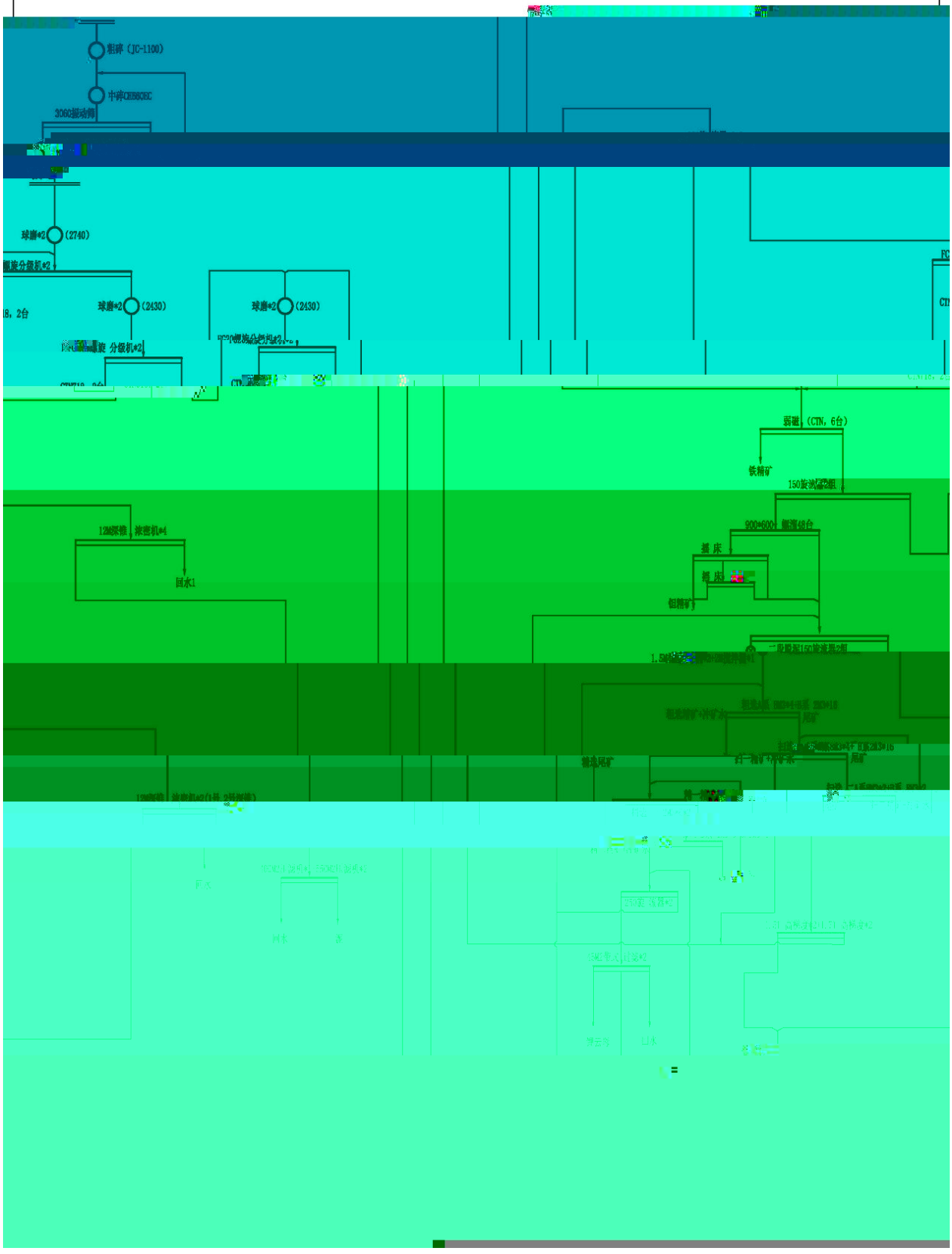
选矿工艺流程图



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ɿ		-238 ˆ Bq/kg˜	-226 ˆ Bq/kg˜	-232 ˆ Bq/kg˜	-40 ˆ Bq/kg˜
		107	133	3.86	1027
		2549	2301	74.3	102
		33.5	51.3	3.47	1833
		61.7	93.0	2.51	428
		68.6	52.1	3.49	599

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1˜ 1Bq/g Â

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1Bq/ĝ 1000Bq/kg˜ Â Ƨ ê

Ì ˆ GB20664-2006˜ “

^{238}U ȁ ^{226}Ra ȁ ^{232}Th ȁ ч ʿ ^{238}U ȁ ^{226}Ra ȁ

^{232}Th ı ≤1Bq/g” Â

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ᄂᆞᆫ Â 2-1 ᄀᆞᆫ ^{238}U ầ

^{232}Th ầ ^{226}Ra ᄂᆞᆫ 0.0617Bq/g ầ 0.00349Bq/g ầ 0.0521Bq/g

1Bq/g Â ừ ê ᄀᆞᆫ

Ầ GB 27742-2011˜ ᄂᆞᆫ 1Bq/g

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ˆ (nGy/h)	21.8~340.8	65.9
ˆ (nGy/h)	33.4~320.9	95.5
ˆ (mSv/a)	—	0.74
ˆ (Bq/m³)	9.2~39.0	21.1
	4.5~8.2	5.8
ˆ nJ/m³˜	25~101	59
	19~33	27
(µg/L)	0.52~1.07	0.77
(µg/L)	0.02~1.08	0.47
-226(mBq/L)	<1.27~6.26	2.44
(µg/L)	0.01~0.33	0.12
(µg/L)	0.02~0.42	0.14
-226(mBq/L)	<1.27~22.6	5.09
-238(Bq/kg)	1 0 ċ Ω 1 Ḥ 7	
-2 (Bq/kg)	1 ṅ 0 ċ . 1 ˜ 7	

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2˘ ê طى ᴇ Ìˇ 2018 12 29 ̂̂̂
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4˘ ê Ìˇ 2017 7 16 ê طى ̄ ˇ ḱ
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6˘ ê ᄀ Ìˇ GB27742-2011˘’

7) “ ˇ ê
‘E ˈ ˆ ˜ Ìˇ ‘E ”ˆ طى [2018]1-¨ ˜’

8˘ ê طى Ìˇ طى 1995˘’

9˘ ê Ìˇ
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10˘ ê Ìˇ HJ 61-2021˘ Â

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Â طى [2018]1-¨
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		ˆ Ɋ ~ -„ ˆ -„ ~		β	Ɋ -„
	γ	HJ 1157-2023 ê γ Ì	1	nGy/h	FH40G+FHZ672E-10 γ
		HJ 1212-2023 ê Ì	4 ˆ Й ~	Bq/m³	RAD7 α
		EJ 378-1989 ê Ì	1.0	nJ/m³	BWLM-PLUS-S ì
		GB/T 14506.30-2010 ê ı 44 Ì	0.003	mg/kg	NexION300X
			0.8	mg/kg	
	-226	GB/T 11743-2013 ê γ Ì	1.0	Bq/kg	BH1936 γ
Й		HJ 700-2014 ê 65 Ì	0.00005	mg/L	NexION300X
			0.00004	mg/L	
	-226	GB 11214-1989 ê -226 Ì	0.002 (Й ~	Bq/L	PC-2100

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	ð ʻ ʼ Ӣ 500 ʼ Â	ȁ	1 /
	β ʻ ȁ ȁ ȁ Â 4 Â		
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	β ʻ ь 8 ȁ ˋE 10 ȁ ȁ 5 23 Â		
	ð ʻ ⁘ 500 ȁ Ӣ 1000 Â	ȁ ȁ -226	1 /
	β ʻ ⁘ 500 ȁ ȁ Ӣ 500 ȁ Ӣ 1000 Â 4 Â		
Ӣ	ð ʻ ˆ ˜ ȁ ȁ 200 ΐ ϥ Â	ȁ ȁ -226	1 /
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	ð ʻ 500 ʼ ȁ Ӣ 500 ʼ ʼ	ȁ ȁ -226	1 /
	β ʻ ȁ ȁ ȁ ʼ ʻ Â 8 Â		
	ð ʻ ϩ ϧ	ȁ	1 /
	β ʻ ⁘ 500 ȁ ȁ Ӣ 500 ȁ Ӣ 1000 Â 4 Â		

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β

-¨	β	β
A1		Й
A2		Й
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A4		٦

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23 γ 7-3 Â

β

-¨	β	β Ղ	β
1	X1	¨	
2	X2		
3	X3		
4	X4		
5	X5	¨	
6	X6		
7	X7		
8	X8	¨	
9	X9~X18	٦	٦
10	X19		Й
11	X20		Й
12	X21		
13	X22		
14	X23		

ˆ 2˜ ˊ γ Â

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β ť 7-4 Â

β

β	β Ղ	β
SW1	⁘ 500	
SW2		
SW3	Й̧ 500	
SW4	Й̧ 1000	

ˆ 2˜ ˊ à -226 à Â

ˆ 3˜ ˊ 1 / Â

Й̧

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GW1 ˆ ˜

GW1

S2		
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S5		٦
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S7		٦
S8		٦ ¨

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DN1 500

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γ Â γ 7-9 Â

β ¯ "	β	γ ˆ nGy/h˜	
		⁝;̀;̀	Й̧
X1	¯	92±2	94±3
X2		85±3	99±3
X3		81±4	94±2
X4		84±3	82±2
X5	¯	88±2	86±3
X6		75±3	92±2
X7		80±2	87±4
X8	¯	76±2	87±3
X9	ˆ1 1#	86±3	85±2
X10	ˆ1 2#	78±3	82±3
X11	ˆ1 3#	94±2	108±2
X12	ˆ1 4#	97±3	91±3
X13	ˆ1 5#	80±3	81±3
X14	ˆ1 6#	90±2	85±3
X15	ˆ1 7#	101±3	93±3
X16	ˆ1 8#	79±3	75±3
X17	ˆ1 9#	78±3	83±3
X18	ˆ1 10#	90±2	80±3
X19		83±3	100±3
X20		79±2	83±2
X21		91±3	90±4
X22		88±2	82±2
X23		91±3	88±3

-" (mg/L) (mg/L)

S6 ˜	7.80	23.4	55.9
S7 ˜	9.02	25.4	41.5
S8 ˜	8.66	20.6	61.9
Bq/kg	19.6 168.0	18.7 160.0	22.4 178.0
Bq/kg	17.0 354.4	10.2 199.5	13.0 425.8

0 4 β Ь

β Ƨ Â 7-13 Â

β	ˆ mg/kg˜	ˆ mg/kg˜	-226 Bq/kg˜
DN1 ˆ ⁘ 500 ˜	21.6	25.5	69.5
DN2 ˆ ˜	7.4	21.1	66.4
DN3 ˆ Й 500 ˜	10.6	18.8	89.5
DN4 ˆ Й 1000 ˜	14.0	27.9	70.9
Bq/kg	19.6 168.0	18.7 160.0	22.4 178.0
Bq/kg	17.0 354.4	10.2 199.5	13.0 425.8

7-8 ᄀ ˋE ᄂ 8Bq/m^3 20Bq/m^3

ᄂ 15.6nJ/m^3 35.6nJ/m^3 Â ê ȁ ȉ

Ь Ȉ ᄀ 4.6Bq/m^3

39.0Bq/m^3 ᄂ 19nJ/m^3 101nJ/m^3 ˋE

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7-9 ᄀ ˋE ȁ ᄀ ᄀ γ

75nGy/h 108nGy/h Â ê طى Ì طى

1995˜ ˆ ч 21.8 340.8˜ nGy/h Â `E

ˇ ä ˆ ˇ γ

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7-10 ˜ 0 ч 0.00063mg/L ä ч

0.00134mg/L ä -226 0.031Bq/L Â ê طى Ì طى

1995˜ ч 0.00052mg/L 0.00107mg/L ä

ч 0.00002mg/L 0.00108mg/L ä -226 ч <0.00127Bq/L 0.00626Bq/L

-226 Â

Й

7-11 ˜ `E ˇ Й ч 0.00042mg/L ä

ч 0.00019mg/L ä -226 0.004Bq/L Â ê طى Ì

ˆ طى 1995˜ ˆ ч 0.01μg/L 0.33μg/L ä

ч 0.02μg/L 0.42μg/L ä -226 ч <0.00127Bq/L 0.0226Bq/L'

ч 0.01μg/L 13.6μg/L ä ч <0.02μg/L 1.20μg/L ä

-226 ч <0.00127Bq/L 0.0380Bq/L `E ˇ Й

β ˆ γ

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7-12 ˜ `E ˇ ä Й ä

ч 4.63mg/kg 20.0mg/kg ˆ 57.2Bq/kg~247Bq/kg˜ ä ч

20.6mg/kg 34.3mg/kg ˆ 83.7Bq/kg~139Bq/kg˜ ä -226 ч 25.1Bq/kg

108Bq/kg Â ê طى Ì طى 1995˜

ˆ ч 19.6Bq/kg 168.0Bq/kg ч

22.4Bq/kg 178.0Bq/kg -226 ч 18.7Bq/kg 160.0Bq/kg'

ч 17.0Bq/kg 354.4Bq/kg ч 10.2Bq/kg 199.5Bq/kg

-226 ч 13.0Bq/kg 425.8Bq/kg Â ˆ ь

β ˆ γ Â

7-13 ¬ `E¨ 0 ¬ 7.4mg/kg 21.6mg/kg

ˆ 91.4Bq/kg~267Bq/kg ˜ à ¬ 18.8mg/kg 27.9mg/kg

ˆ 76.4Bq/kg~113Bq/kg˜ à 226 ¬ 66.7Bq/kg 89.5Bq/kg Â ê ط

Ì ط 1995˜ ˆ ¬

19.6Bq/kg 168.0Bq/kg ¬ 22.4Bq/kg 178.0Bq/kg -226

¬ 18.7Bq/kg 160.0Bq/kg' ¬ 17.0Bq/kg 354.4Bq/kg

¬ 10.2Bq/kg 199.5Bq/kg -226 ¬ 13.0Bq/kg 425.8Bq/kg Â

β ˆ γ Â

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ˆ 1˜ 0 ч 0

ч 0.00063mg/L ầ ч 0.00134mg/L ầ -226

0.031Bq/L Â ê طى Ì طى 1995˜

ч 0.00052mg/L 0.00107mg/L ầ ч 0.00002mg/L

0.00108mg/L ầ -226 ч <0.00127Bq/L 0.00626Bq/L

-226 Â

ˆ 2˜ Ӣ ầ ầ -226

β ˆ γ

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